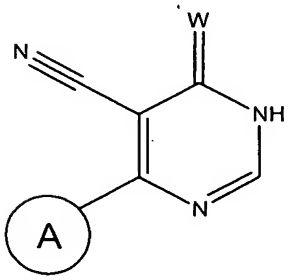
What is Claimed is:

1. A compound of fomula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, $-CN$, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, $-CN$, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl,

heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic;

provided that when ring A is phenyl, it must be substituted.

2. The compound of claim 1, wherein W is oxygen.

3. The compound of claim 1, wherein W is sulfur.

4. The compound of claim 2 or 3, ring A is phenyl substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, or $-C(=NH)-N(R^1)_2$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 5-7-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-2 heteroatoms independently selected from N, O or S.

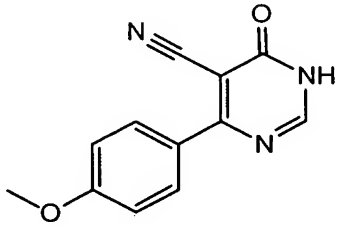
5. The compound of claim 4, wherein ring A is phenyl substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-NR^1SO_2R^1$, or $-C(=S)N(R^1)_2$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 5-7-membered heterocyclyl, aryl, or heteroaryl ring having 0-2 heteroatoms independently selected from N, O or S.

6. The comound of claim 2 or 3, wherein ring A is a 5-6 membered heterocyclyl or heteraryl ring having 1-2 heteroatoms independently selected from N, O or S, wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-NR^1SO_2R^1$, or $-C(=S)N(R^1)_2$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 5-7-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-2 heteroatoms independently selected from N, O or S.

7. The compound of claim 5, wherein ring A is naphthyl, benzodioxolyl, dihydrobenzodioxinyl, benzothiazolyl, benzoimidazolyl, or dihydrobenzo[b][1,4]dioxepinyl, wherein each member of ring A is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-NR^2SO_2R^2$, or $-C(=S)N(R^2)_2$.

8. The compound of claim 6, wherein ring A is pyridinonyl, tetrahydro-quinolinyl, pyridyl, or thiazolyl, wherein each member of ring A is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-NR^2SO_2R^2$, or $-C(=S)N(R^2)_2$.

9. The compound of claim 1, selected from:



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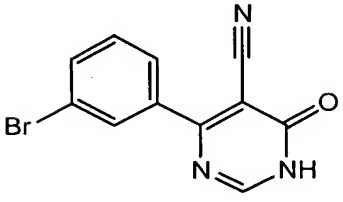

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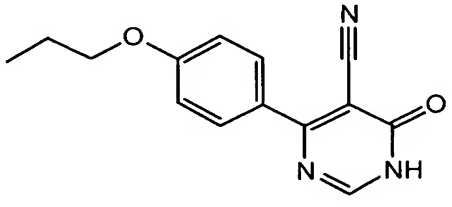

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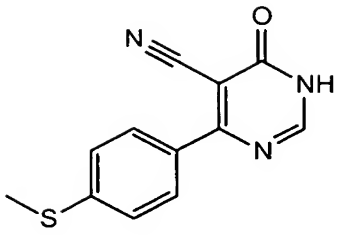

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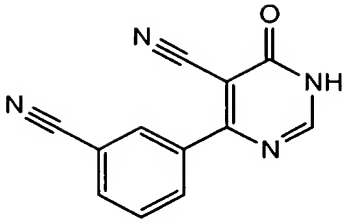

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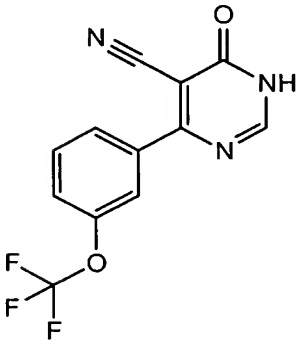

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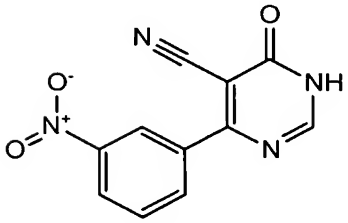

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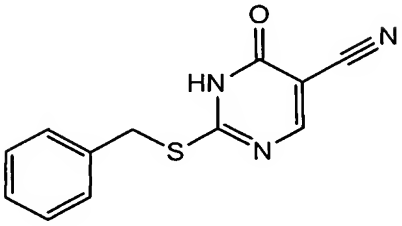

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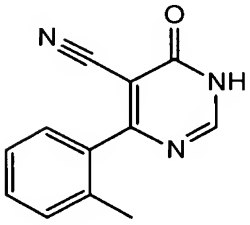

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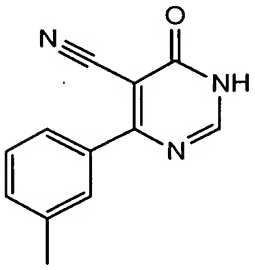

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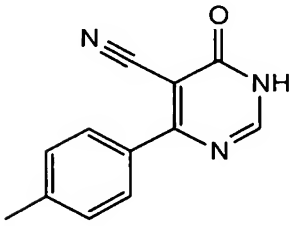

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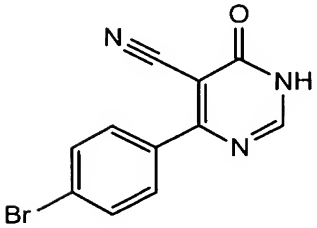

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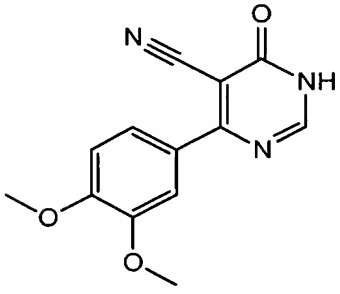

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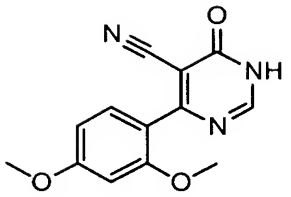

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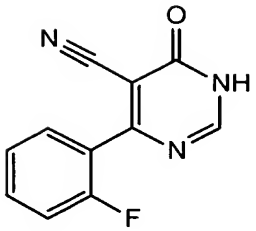

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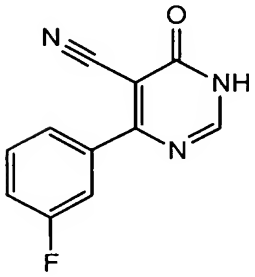

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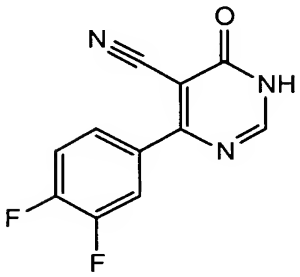

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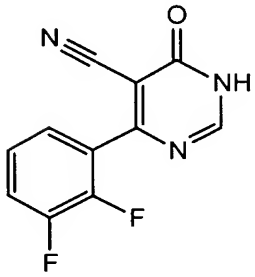

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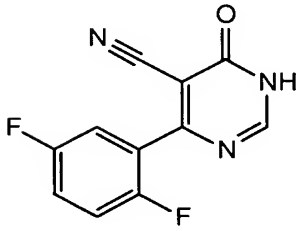

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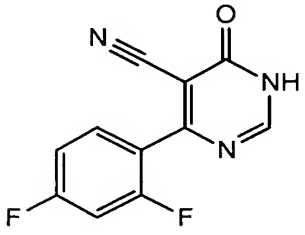

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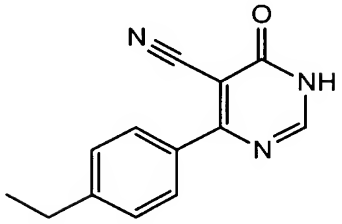

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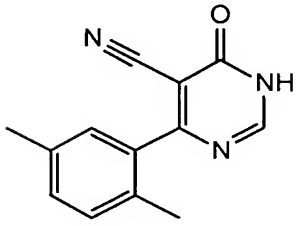

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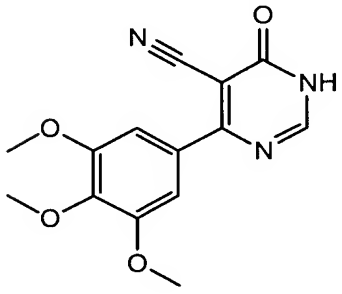

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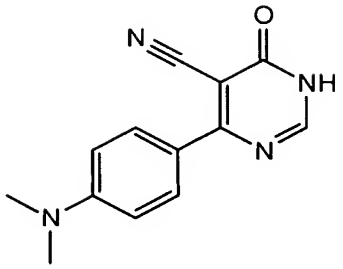

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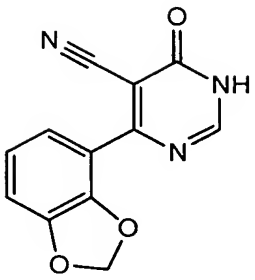

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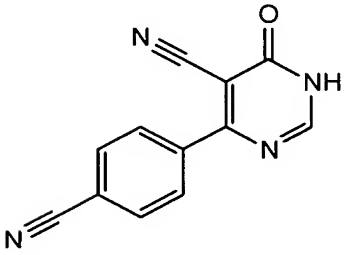

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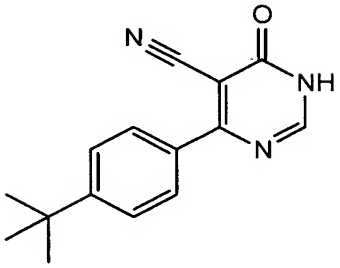

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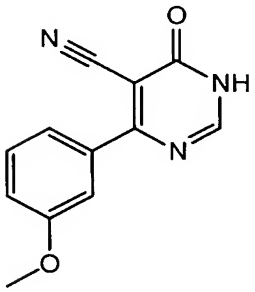

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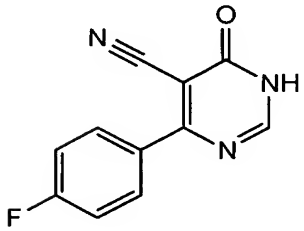

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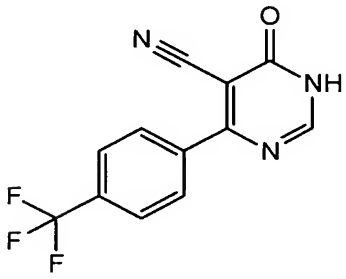

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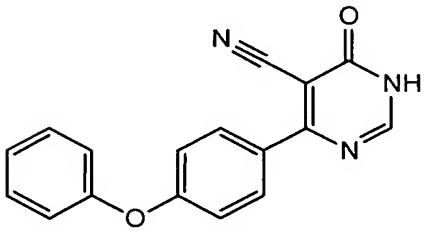

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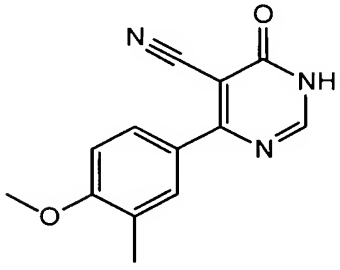

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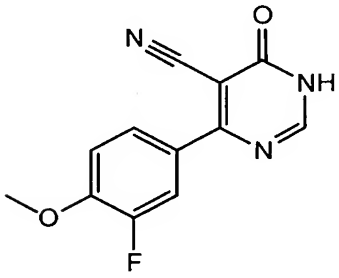

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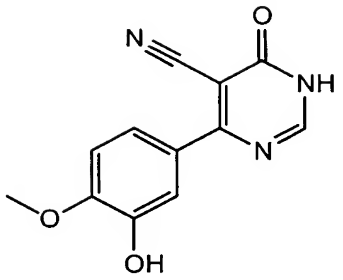

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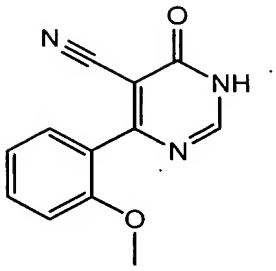

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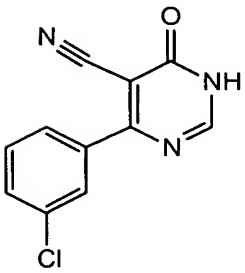

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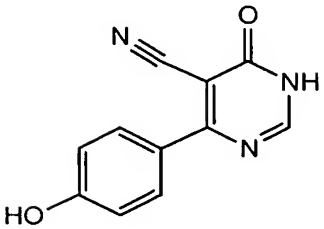

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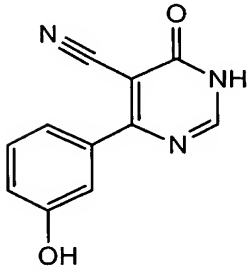

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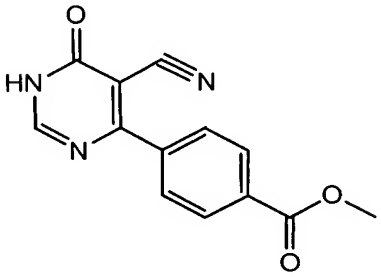

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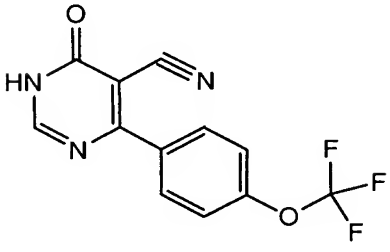
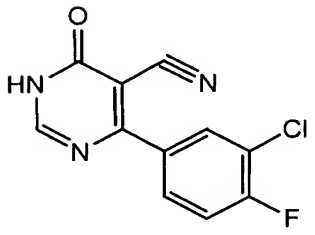
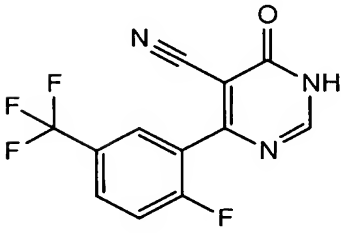


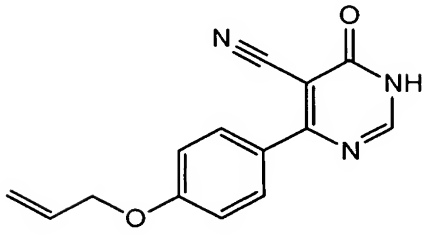
I-41



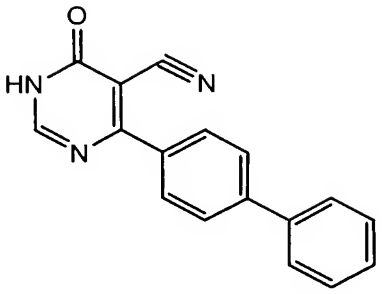
I-42



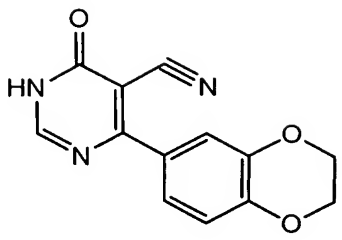
I-43



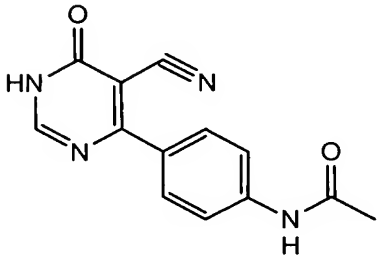
I-44



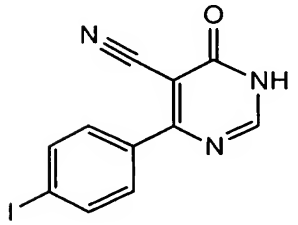
I-45



I-46



I-47



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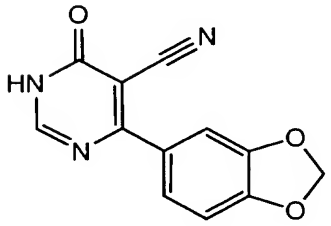
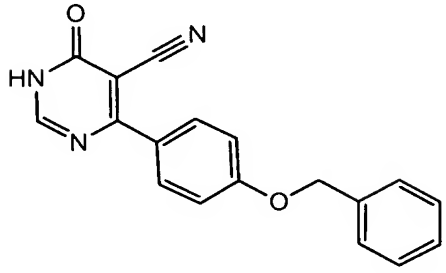
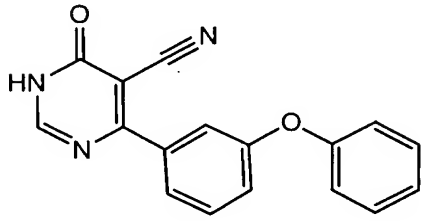


I-49



I-50



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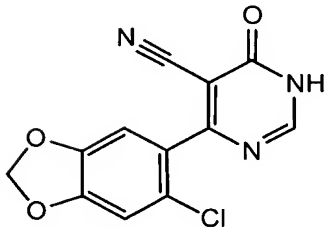
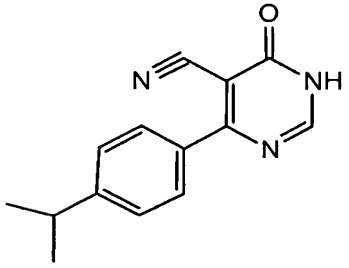
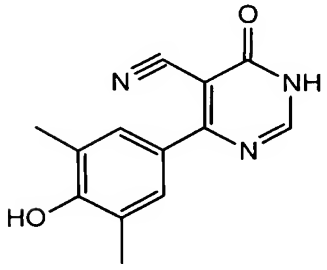


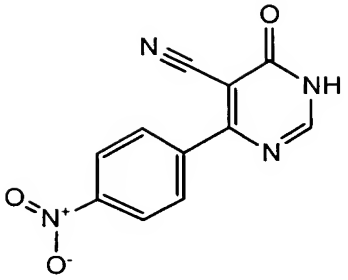
I-52



I-53

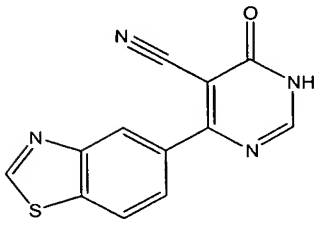


I-54

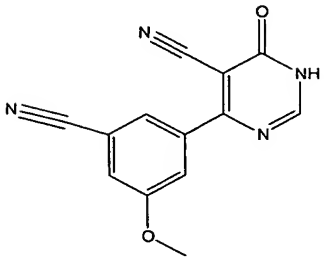


I-55

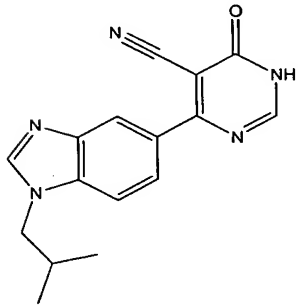
I-56



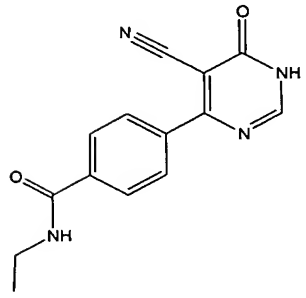
I-57



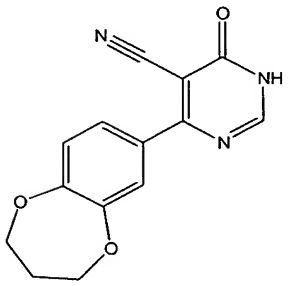
I-58



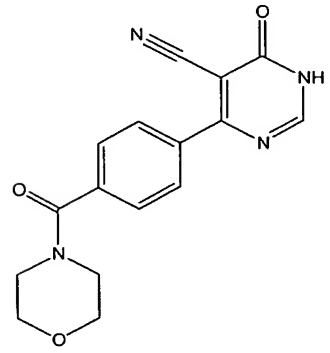
I-59



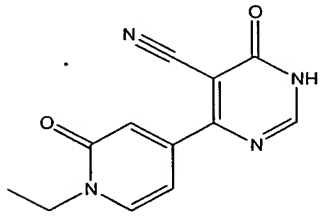
I-60



I-61



I-62



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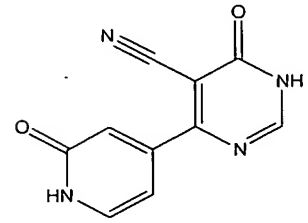
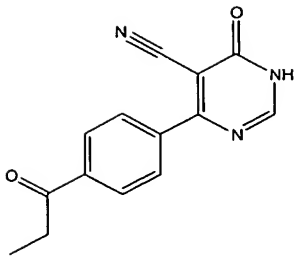
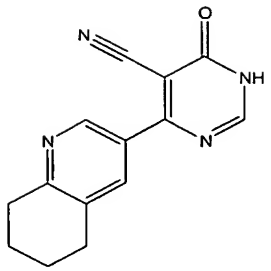


I-64



I-65



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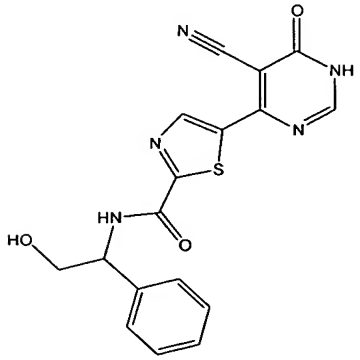
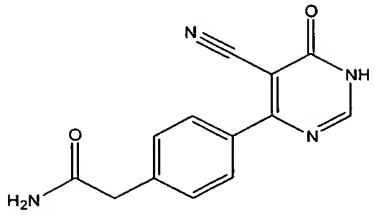
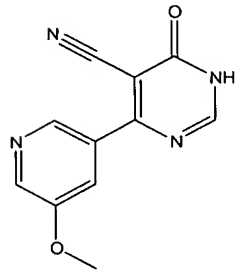


I-67



I-68



I-69

10. A composition comprising a compound of claim 1, and a pharmaceutically acceptable carrier, adjuvant, or vehicle.

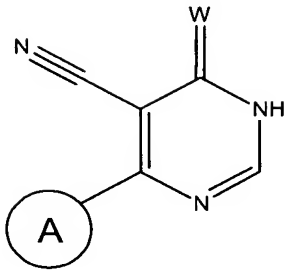
11. The composition of claim 9, additionally comprising a therapeutic agent selected from an anti-inflammatory agent, an immunomodulatory or immuno-suppressive agent, a neurotrophic factor, an agent for treating cardiovascular disease, an agent for treating liver disease, an anti-viral agent, an agent for treating blood disorders, an agent for treating diabetes, or an agent for treating immunodeficiency disorders.

12. A method of inhibiting GSK-3 activity in:

(a) a patient in need thereof; or

(b) a biological sample;

which method comprises administering to said patient, or contacting said biological sample with a compound of formula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo,

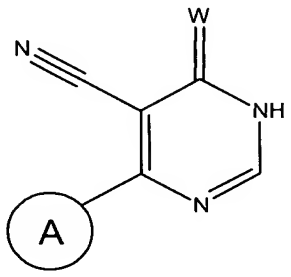
$-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount effective to inhibit GSK-3 activity.

13. A method of enhancing glycogen synthesis or lowering blood levels of glucose in a patient in need thereof, comprising administering to said patient a compound of formula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

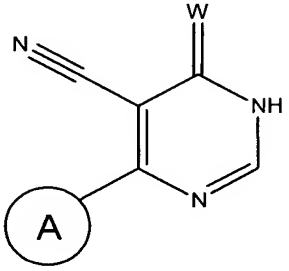
each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount sufficient to enhance glycogen synthesis or lower blood glucose levels.

14. A method of inhibiting the production of hyperphosphorylated Tau protein in a patient in need thereof, comprising administering to said patient a compound of formula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

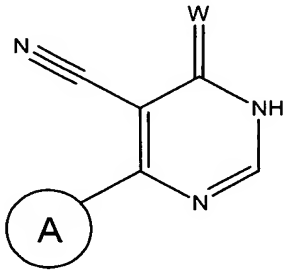
each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount sufficient to inhibit the production of hyperphosphorylated Tau protein.

15. A method of inhibiting the phosphorylation of β-catenin in a patient in need thereof, comprising administering to said patient a compound of formula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent

occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

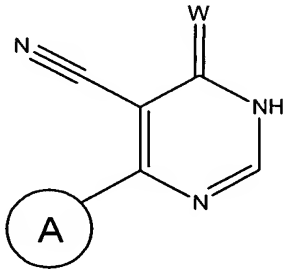
each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount sufficient to inhibit phosphorylation of β-catenin.

16. A method of treating or lessening the severity of a disease or condition selected from a cardiac disorder, a neurodegenerative disorder, an autoimmune disorder, an inflammatory disorder, an immunologically mediated disorder, or a metabolic disorder, comprising administering to a patient a compound of formula **I**:



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or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$,

$-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

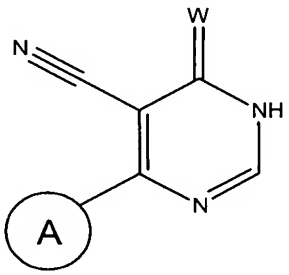
each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount effective to treat or lessen the severity of said disease or condition.

17. A method of treating or lessening the severity of a disease or condition selected from allergy, asthma, diabetes, Alzheimer's disease, Huntington's disease, Parkinson's disease, AIDS-associated dementia, amyotrophic lateral sclerosis (AML, Lou Gehrig's disease), multiple sclerosis (MS), schizophrenia, cardiomyocyte hypertrophy, reperfusion/ischemia, or baldness, comprising administering to a patient a compound of formula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, $-CN$, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$, $-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, $=O$, $=S$, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, $-CN$, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, $=O$, $=S$, $=NNHR^2$, $=NN(R^2)_2$,

$=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

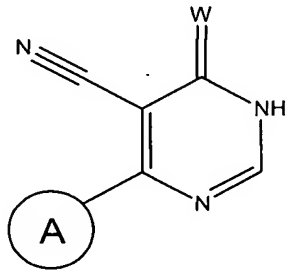
each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount effective to treat or lessen the severity of said disease or condition.

18. A method of treating or lessening the severity of stroke in a patient, comprising administering to said patient a compound of formula **I**:



I

or a pharmaceutically acceptable salt thereof, wherein:

W is oxygen or sulfur;

ring A is a 5-6 membered aryl, heterocyclyl or heteroaryl ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

wherein ring A is optionally substituted with 1-4 groups independently selected from halo, $-R^1$, $-OR^1$, $-SR^1$, $-NO_2$, -CN, $-N(R^1)_2$, $-NR^1C(O)R^1$, $-NR^1C(O)N(R^1)_2$, $-NR^1CO_2R^1$, $-NR^1NR^1C(O)R^1$, $-NR^1NR^1C(O)N(R^1)_2$, $-NR^1NR^1CO_2R^1$, $-C(O)C(O)R^1$, $-C(O)CH_2C(O)R^1$, $-CO_2R^1$, $-C(O)R^1$, $-C(O)N(R^1)_2$, $-OC(O)N(R^1)_2$, $-S(O)_2R^1$, $-SO_2N(R^1)_2$, $-S(O)R^1$, $-NR^1SO_2R^1$,

$-NR^1SO_2N(R^1)_2$, $-C(=S)N(R^1)_2$, $-C(=NH)-N(R^1)_2$, =O, =S, $=NNHR^1$, $=NN(R^1)_2$, $=NNHC(O)R^1$, $=NNHCO_2(R^1)$, $=NNHSO_2(R^1)$, or $=NR^1$, wherein two independent occurrences of R^1, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^1 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

each R^1 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^2$, $-OR^2$, $-SR^2$, $-NO_2$, -CN, $-N(R^2)_2$, $-NR^2C(O)R^2$, $-NR^2C(O)N(R^2)_2$, $-NR^2CO_2R^2$, $-NR^2NR^2C(O)R^2$, $-NR^2NR^2C(O)N(R^2)_2$, $-NR^2NR^2CO_2R^2$, $-C(O)C(O)R^2$, $-C(O)CH_2C(O)R^2$, $-CO_2R^2$, $-C(O)R^2$, $-C(O)N(R^2)_2$, $-OC(O)N(R^2)_2$, $-S(O)_2R^2$, $-SO_2N(R^2)_2$, $-S(O)R^2$, $-NR^2SO_2R^2$, $-NR^2SO_2N(R^2)_2$, $-C(=S)N(R^2)_2$, $-C(=NH)-N(R^2)_2$, =O, =S, $=NNHR^2$, $=NN(R^2)_2$, $=NNHC(O)R^2$, $=NNHCO_2(R^2)$, $=NNHSO_2(R^2)$, or $=NR^2$, wherein two independent occurrences of R^2, on the same substituent or different substituents, optionally taken together with the atom or atoms to which each R^2 group is bound, form a 3-8-membered cycloalkyl, heterocyclyl, aryl, or heteroaryl ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

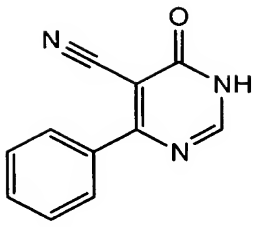
each R^2 is independently selected from hydrogen, aliphatic, aryl, heteroaryl or heterocyclyl, wherein each member of R^1 except hydrogen is optionally substituted with halo, $-R^3$, $-OR^3$, $-SR^3$, $-NO_2$, -CN, $-N(R^3)_2$, $-NR^3C(O)R^3$, $-NR^3C(O)N(R^3)_2$, $-NR^3CO_2R^3$, $-NR^3NR^3C(O)R^3$, $-NR^3NR^3C(O)N(R^3)_2$, $-NR^3NR^3CO_2R^3$, $-C(O)C(O)R^3$, $-C(O)CH_2C(O)R^3$, $-CO_2R^3$, $-C(O)R^3$, $-C(O)N(R^3)_2$, $-OC(O)N(R^3)_2$, $-S(O)_2R^3$, $-SO_2N(R^3)_2$, $-S(O)R^3$, $-NR^3SO_2R^3$, $-NR^3SO_2N(R^3)_2$, $-C(=S)N(R^3)_2$, $-C(=NH)-N(R^3)_2$, =O, =S, $=NNHR^3$, $=NN(R^3)_2$, $=NNHC(O)R^3$, $=NNHCO_2(R^3)$, $=NNHSO_2(R^3)$, or $=NR^3$; and

each R^3 is independently hydrogen or unsubstituted aliphatic; or

a pharmaceutical composition comprising said compound and a pharmaceutically acceptable carrier, adjuvant, or vehicle;

in an amount effective to treat or lessen the severity of stroke in said patient.

19. The method according to any one of claims 12-18, wherein said method comprises administering to said patient a compound of claim 8 or compound **I-1**:



I-1 .

20. The method according to any one of claims 12-18, comprising the additional step of administering to said patient an additional therapeutic agent selected from an anti-inflammatory agent, an immunomodulatory or immunosuppressive agent, a neurotrophic factor, an agent for treating cardiovascular disease, an agent for treating liver disease, an anti-viral agent, an agent for treating blood disorders, an agent for treating diabètes, or an agent for treating immunodeficiency disorders, wherein:

said additional therapeutic agent is appropriate for the disease being treated; and

said additional therapeutic agent is administered together with said composition as a single dosage form or separately from said composition as part of a multiple dosage form.